380 SIGN MATERIALS

The Table below lists the sheeting alternatives that are acceptable for each category of signing. Type II is considered a higher grade of sheeting than Type I, Type III higher than Type II and Type P higher than Type III. Type VI is a variation on Type P suitable for use with roll up signs.

The type of sheeting to be used in any given application will be called out on the project plans. If no sheeting type is specified, the default selection shall be the lowest type of sheeting shown in the table for a specific use. With few exceptions, designers are to use the lowest grade sheeting indicated in the table for the specified application. Use of a higher grade of reflective sheeting shall require approval of the State Traffic Engineer. Use of sign sheeting other than that specified in this section shall require approval by the State Traffic Engineer.

SIGN TYPE OR APPLICATION	TYPE OF SHEETING					
	I	II	III/IV	P	V	VI
Warning Signs			X	X		
Regulatory Signs			X	X		
Guide Signs (Green, Blue, or Brown)		X	X			
Direct Applied Characters and Shields on Guide Signs		X	X	X		
Demountable Characters and Shields on Guide Signs				X		
Stand Alone Marker & Route Shield Signs		X	X			
Orange Fluorescent Construction Signs*				X		X
Orange Roll-up Construction Signs**						X
Barricades, Channelizers and other Work Zone devices		X	X	X		
Milepost Markers		X				
Object Markers, Guard Rail Markers, and Delineators				X	X	
Adopt-A-Highway Signs and Logo Signs	X					

Types I, II, III & VI are all ASTM D 4956 sheeting designations. Type P is an ADOT designation for prismatic sheeting.

* Orange Warning Work Zone signs shall use prismatic fluorescent orange sheeting per the ADOT Approved Products List (http://www.dot.state.az.us/ABOUT/atrc/apl.htm)

** Non-reflective sign materials may be used for strictly daytime applications such as maintenance and survey work where the signs may be clearly visible under available natural light.

The designations and requirements for sheeting shall conform to American Society of Testing Materials (ASTM) D4956 Standard Specification for Retroreflective Sheeting for Traffic Control, unless otherwise noted. The ASTM D4956 specification is cited in its entirety by AASHTO M 268 and FP-96.

The Type I (engineering grade - EG) and Type II (super engineering grade - SEG) retroreflective sign sheeting shall consist of spherical lens elements embedded within a transparent plastic having a smooth, flat outer surface.

The Type III (high intensity grade - HIG) retroreflective sign sheeting shall consist of either spherical or prismatic lens elements adhered to a synthetic resin and encapsulated by a plastic having a smooth outer surface.

The Type P (super high intensity grade - SHIG) retroreflective sign sheeting shall consist of prismatic lens elements adhered to a synthetic resin and encapsulated by a plastic having a smooth outer surface.

Orange warning signs shall use flourescent orange sheeting Type P or Type VI. The only exception is for warning signs strictly used in daytime applications such as maintenance and survey work where the signs may be clearly visible under available natural light, then non-reflective Type-VI sign materials may be used.

The Type VI shall be a flexible prismatic lens element material with a Class 5 backing that is specifically designed for roll-up signs.

Opaque films shall be either acrylic or vinyl type films. The acrylic film shall be used on the Type II, III and P sheeting backgrounds. Vinyl is to be used on the Type I sheeting backgrounds.

Traffic control devices, channelizers, barricades, delineators, and other devices will utilize the types of reflective materials called for in the standard drawings.

Designers, construction and maintenance personnel need to become familiar with the Approved Products List (APL) which is maintained by the Arizona Transportation Research Center and available through that office, or on the ADOT intranet and internet at http://www.dot.state.az.us/ABOUT/atrc/pride.htm, because not all colors or types of sheeting products have been approved for use. For instance, some inks used in printing of certain types of regulatory and guide signs have not performed satisfactorily in testing and therefore any signs using those inks are unacceptable.

Details on direct applied and demountable copy, as well as other aspects of signs and sign sheeting may be found in Sections 608 and 1007 of the Standard Specifications. All potential users need to become familiar with these parts of the Standards and any revisions that may be issued in Stored Special Provision format.